

We claim:

1. A loop reactor comprising: at least 8 vertical legs; at least two discharge conduits on opposite sides of at least one loop reactor vertical plane of symmetry; and at least two feed inlets located on opposite sides of at least one loop reactor vertical plane of symmetry.
2. The loop reactor of claim 1, comprising at least one discharge conduit and one feed inlet on one side of at least one loop reactor vertical plane of symmetry and at least one discharge conduit and one feed inlet on the other side of the same plane of symmetry.
3. The loop reactor of claim 1, further comprising at least two catalyst inlets located on opposite sides of the at least one loop reactor vertical plane of symmetry.
4. The loop reactor of claim 1, further comprising at least two circulators located on opposite sides of the at least one loop reactor vertical plane of symmetry.
5. The loop reactor of claim 3, further comprising at least two circulators located on opposite sides of the at least one loop reactor vertical plane of symmetry.
6. The loop reactor of claim 2, further comprising at least one catalyst inlet and at least one circulator on one side of the same plane of symmetry and at least one catalyst inlet and at least one circulator on the other side of the same plane of symmetry.
7. A process of converting a loop reactor into multiple loop reactors comprising:

starting with a loop reactor comprising at least 8 vertical legs; at least two non-vertical conversion runs, each non-vertical run connected in fluid flow communication with two vertical legs; at least two feed inlets; and at least two continuous discharge conduits;

disconnecting at least one connection of each conversion run; and
reconnecting each conversion run in fluid flow communication
with a different vertical leg in such a manner to form multiple loop
reactors each having at least one feed inlet and at least one
continuous discharge conduit.

8. The process of claim 7, wherein the multiple loop reactors comprise two loop reactors in series formed by connecting at least one discharge conduit of a first of the multiple reactors in fluid flow communication with a feed inlet of a second of the multiple reactors.
9. The process of claim 7, wherein at least one of the conversion runs is a bottom run.
10. The process of claim 9, wherein the conversion runs are both bottom runs.
11. The process of claim 10, wherein at least two of the conversion runs are located parallel and adjacent to each other on the loop reactor before being disconnected.
12. The process of claim 7, wherein at least one of the conversion runs is a top run.
13. The process of claim 12, wherein the conversion runs are both top runs.
14. The process of claim 7, wherein at least one of the at least two continuous discharge conduits is located in a bottom run other than a conversion run.
15. The process of claim 14, wherein at least two of the at least two continuous discharge conduits are located at bottom runs other than conversion runs.
16. The process of claim 7, wherein at least one of the at least two feed inlets is located at a bottom run other than the conversion runs.
17. The process of claim 16, wherein at least two of the at least two feed inlets are located at bottom runs other than the conversion runs.

18. The process of claim 7, wherein the multiple loop reactors comprise first and second reactors each having at least one feed inlet and at least one continuous discharge conduit.
19. The process of claim 18, wherein at least one discharge conduit of one of the reactors is in fluid flow communication with at least one feed inlet of the other reactor.
20. The process of claim 18, wherein the first and the second reactor each has at least one catalyst inlet and at least one circulator.
21. The process of claim 7, wherein at least one multiple loop reactor has at least one feed inlet for feeding at least one of monomer, co-monomer, co-catalyst, diluent, polymer modifier, or mixtures thereof.
22. The process of claim 7, wherein the at least two conversion runs have substantially equal length.
23. The process of claim 19, wherein at least one multiple loop reactor has at least one feed inlet for feeding at least one of monomer, co-monomer, co-catalyst, diluent, polymer modifier, or mixtures thereof.
24. The process of claim 8, wherein the two of the reactors have substantially the same volume.
25. The process of claim 8, wherein the two of the reactors have unequal volumes.
26. A loop reactor system comprising a) at least 8 parallel legs; and b) at least 8 connector fittings, each said fitting adapted to connecting a pair of said parallel legs, such that assembly of said parallel legs and said connector fittings forms a single continuous closed loop; wherein at least 2 of said connector fittings are adapted to connecting alternate pairs of parallel legs, such that assembly of said parallel legs and said connector fittings forms at least 2 continuous closed loops.
27. The loop reactor of claim 26, wherein the at least 2 continuous closed loops are in series.

28. The loop reactor of claim 26, wherein the at least 2 continuous closed loops each has at least one feed inlet, at least one catalyst inlet, at least one circulator, and at least one discharge conduit.

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